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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/759,565

01/16/2004

James D. Smith

200310766

8124

22879

7590

01/11/2006

HEWLETT PACKARD COMPANY  
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INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

LAM, DAVID

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/759,565	SMITH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David Lam	2827	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/16/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restriction***

1. Applicant's election without traverse of claim 1-12 in the reply filed on 11/2/05 is acknowledged.

***Respond to Election/Restriction***

2. This office action is in response to the election/restriction file on 11/2/05.
  - Claims 13-22 have been cancelled.
  - Claims 1-12 are pending in the application.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2827

3. Claims 1-5, 7-10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. (5,546,375) in view of Yasukawa (6,818,921).

Shimada et al. discloses a tip (5, 50) attached to a chip component for marking a readable change in a storage medium, the tip comprising: a conductive layer (54a); a tip sub-layer (50) disposed on the conductive layer; an outer layer (55) disposed on the tip sub-layer formed of silicide material (silicon nitride); wherein the chip component is constructed with at least one type of metal material; wherein the chip component is an IC electrical component (Figs.12-14). *See Figs. 1-3, 9-14; Cols. 5-10, 12-16, respectively.*

With respect to claims 1-3, 7-9, Shimada et al. discloses all the elements as noted above.

Shimada lack an inclusion of the amorphous silicon that made of the tip sub-layer, and wherein the silicide includes metal having silicide formation temperature below a melting temperature of the metal material of the chip.

Yasukawa discloses the use of amorphous silicon to form a layer (208) (Fig. 18a, Col. 29, lines 41-63)), and a silicide layer (11a) includes metal having silicide formation temperature below a melting temperature (Fig. 18, Col. 12, lines 20-29).

It would have been obvious to one having ordinary skill in the art at the time of the invention of provide amorphous silicon tip sub-layer and a silicide layer includes metal having silicide formation temperature below a melting temperature of Shimada's device as taught by Yasukawa in order to reduce size, power consumption and highly reliable semiconductor memory device.

Art Unit: 2827

With respect to claims 4-5, 10-12, Shimada et al. and Yasukawa disclose all the elements as applied to claim 1 above, and wherein the metal of the silicide is Palladium, molybdenum (Col. 12, lines 20-29).

4. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. (5,546,375) and Yasukawa (6,818,921) as applied to claims 1, 7 above, and further in view of Sugahara et al. (5,504,376).

Regarding to claims 6, 11, Shimada et al. and Yasukawa disclose all the element as applied to claims 1, 7 above.

Shimada et al. and Yasukawa did not explicitly disclose wherein the melting temperature is below 500 degree C.

Sugahara et al. disclose a table silicide includes a metal and having a melting temperature is below 450-degree C, which is below 500-degree C. *See Table 1; Col. 8, lines 1-15.*

It would have been obvious to one having ordinary skill in the art at the time of the invention to form the silicide of Shimada et al. and Yasukawa includes a metal and having a melting temperature is below 500-degree C as taught by Sugahara et al. in order to avoid degradation of the device characteristic, which is involved in thermal diffusion during process of manufacturing of the semiconductor memory device.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2827

- Kaneko et al. disclose a storage medium, method and stored information reading method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lam whose telephone number is 571-272-1782. The examiner can normally be reached on 6:00 – 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852852. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**D. Lam**

January 8, 2006



**DAVID LAM**  
**PRIMARY EXAMINER**